## AGGREGATE TECHNICIAN DUTIES

Duties of the Aggregate Technician are detailed in Materials I.M. 209 and I.M. 300 series and consist of, but are not limited to, the following:

A. Sampling

1. Obtain representative samples by approved method(s).
2. Sample at required frequencies.
3. Identify samples with pertinent information such as:
    a. Type of material
    b. Intended use
    c. Production beds working depth
    d. Sampling method

B. Gradation testing

1. Follow appropriate gradation testing methods.
2. Maintain current applicable specifications.
3. Post test results within 24 hours of sampling.

C. Other testing as required (specific gravity, moisture, deleterious material, etc.)

1. Follow appropriate testing methods.
2. Maintain current applicable specifications.
3. Complete required reports.

D. Sampling and testing equipment

1. Clean and check testing sieves for defects.
2. Assure scale accuracy.
3. Maintain sampling and testing equipment.

E. Communication

1. Notify Materials Department for production start-up or changes.

2. Relay test results to appropriate production or supervisory personnel.

3. Report failing test results immediately to appropriate personnel (including Materials Department) and assure remedial actions are taken.

F. General

1. Monitor stockpiling procedures to avoid contamination and excess segregation.

2. Assure proper identification of stockpiles

3. Assure specification requirements for intended use are met before shipment.

4. Assure sampling locations are safe.

5. Assure proper bedding planes or production depths are maintained.

G. Documentation

1. Report all production test results of certified aggregates on form #821278 and distribute as required.

2. Assure “plant production log” is maintained.

**PORTLAND CEMENT CONCRETE (PCC) TECHNICIAN DUTIES**
**PAVING AND STRUCTURAL CONCRETE**

The Quality Control Technician shall have no other duties while performing certified inspection duties. The District Materials Engineer may approve all Quality Control activities be performed by a single Certified Technician for low production situations.

Many of the duties of the PCC Level II Technician are detailed in I.M. 527 (Paving) and I.M. 528 (Structural) and consist of, but are not limited to, the following:

H. Stockpiles

1. Assure proper stockpiling procedures.
2. Prevent intermingling of aggregates.
3. Prevent contamination.
4. Prevent segregation.

I. Plant Facilities

1. Assure safe sampling locations.
2. Check for equipment compliance.
3. Assure proper laboratory location and facilities.

J. Calibration

1. Be present during calibration (paving).
2. Check plant calibration (structural).
3. Assure proper batch weights.

K. Cement (Fly Ash) and Aggregate Delivery

1. Check for proper sources and certification.
2. Document quantities delivered.
3. Monitor condition of shipments.

L. Plant Sampling

1. Check aggregate gradations by obtaining, splitting, and testing samples.

2. Check aggregate moistures and specific gravity.

M. Proportion Control

1. Check scale weights and operation.

2. Check admixture dispensers.

3. Check mixing time and revolutions.

4. Check cement yield. (Paving plant only unless over 10,000 c. yds.).

N. Concrete Tests

1. Cure flexural test specimens.

2. Test flexural specimens (Contract agency will perform test in structural plant).

3. Conduct maturity testing.

O. Test Equipment

1. Clean and maintain scales, screens, pycnometers and beam molds, and laboratory facility.

P. Documentation

1. Prepare daily plant reports (paving), weekly plant reports (structures).

2. Document all checks and test results in the field book.

3. Maintain daily diary of work activity.

## HOT MIX ASPHALT (HMA) TECHNCIAN INSPECTION DUTIES

The Quality Control Technician shall have no other duties while performing certified inspection duties. The District Materials Engineer may approve all Quality Control activities be performed by a single Certified Technician for low production situations.
Many of the duties of the Hot Mix Asphalt Technician are detailed in I.M. 508 and 511. These duties consist of, but are not limited to, the following:

A. Stockpiles

1. Assure proper stockpiling
2. Prevent intermingling of aggregates.
3. Prevent contamination.
4. Prevent segregation.
5. Document certified aggregate deliveries.

B. Plant Erection

1. Assure safe sampling locations.
2. Check specification compliance.
2. Check for proper laboratory location.

C. Calibration

1. Be in possession of appropriate mix design data.
2. Be present at the calibration.
3. Assure proper procedures being followed.
4. Obtain and/or record calibration data.
5. Check for proper gate settings.

D. Asphalt Delivery

1. Check for proper source and certification
2. Document deliveries.
3. Document quantities by tank stick, weighing, or metering.
4. Monitor Temperature

E. Plant Sampling

1. Check cold-feed gradation by obtaining, splitting, and testing samples.
2. Obtain asphalt binder samples.
3. Test aggregate moisture.

F. Mix Control

1. Monitor coating of aggregates.
2. Monitor and record mix temperature.
3. Monitor and record asphalt binder temperature.
4. Check trucks for proper loading and possible segregation.
5. Monitor mixing time.
6. Monitor recycle proportions.

G. Weights

1. Observe scale calibrations.
2. Check for specification compliance.
3. Regularly check calibrations.

H. Testing

1. Core testing*.
    a. Determine field density and percent voids of compacted mix.
    b. Calculate quality index for density and thickness when required.
2. Uncompacted mix.
    a. Bulk specific gravity of laboratory-compacted specimen.
    b. Maximum specific gravity.
    c. Calculate voids, VMA, film thickness.

I. Documentation

1. Prepare Daily Plant Inspection Report.

2. Document all checks and test results in field book.
3. Maintain a daily diary of work activity.
4. Moving averages.
5. Control Charts.

*On projects where the contractor is not responsible for the quality control testing, then the agency is responsible for core testing functions.

## PRESTRESS TECHNICIAN DUTIES

Duties of the Prestress Technician are detailed in Materials I.M. 570 and consist of, but are not limited to, the following:

A. Pre-pour

1. Identify and document materials requiring outside fabrication inspection.
2. Identify potential fabrication or production problems and notify Iowa DOT inspectors.
3. Verify that all materials incorporated meet the requirements of the contract documents.
4. Review concrete placement documents for strand locations.
5. Check tension calculations.
6. Measure elongation and gauge pressure during tensioning.
7. Check hold down and insert locations.
8. Check stress distributions.
9. Check steel reinforcement and placement.
10. Check strand position.
11. Check condition of pallet.
    a. level
    b. holes
    c. gaps
    d. other deformities
12. Determine moisture of aggregates.
13. Check form condition and placement.
    a. oil
    b. line alignment level
    c. tightness

B. Concrete Placement

1. Check on use of an approved mix design and batching operations (sequence).
2. Assure appropriate placement and proper vibration techniques.

3. Measure and record concrete temperature.
4. Assure test cylinders are properly made.
5. Assure appropriate finish.
6. Assure appropriate curing operations.

C. Post-pour

1. Check temperature and record during curing process.
2. Assure concrete strength has been met prior to releasing the line.
3. Assure proper detensioning procedure.
4. Check unit for defects and obtain approval for repairs.
5. Identify and store cylinders with the respective units.
6. Check beam ends for fabrication in accordance with the plans.
7. Assure exterior sides of facia beams are grouted.
8. Inspect after patching and desired surfacing.
9. Measure and record overall dimensions of beam.
10. Measure and record camber at release and compare to design camber.
11. Check and/or measure and record lateral sweep before shipping.
12. Assure proper cylinder cure.

## PROFILOGRAPH TECHNCIAN DUTIES

Duties of the Profilograph Technician are detailed in Materials I.M. 341 and consist of, but are not limited to, the following:

A. Test pavement for smoothness criteria

B. Evaluate and certify test results

1. Certified person that reduces trace must sign certified test report
2. Profilograms become part of permanent project record

C. Documentation

1. Certified Profilograph test report must include following statement:

   This is to certify that all testing and trace reduction herein described has been performed according to applicable contract specifications and requirements.